

# *The African Organisation for Standardisation*

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ARS 853 (2012) (English): Cassava bread  
-- Specification



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**Cassava bread — Specification**



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## Introduction

This African Standard was developed in an effort to: a) specify requirements for cassava bread and related products; b) ensure adequate and hygienic production; and c) ensure acceptable product quality and safety for human consumption.

Draft African Standard for comments only — Not to be cited as African Standard





## Cassava bread — Specification

### 1 Scope

This Standard specifies requirements for cassava bread and related products, intended for human consumption, obtained from the processing of cassava. It does not include the manufacturing process for cassava bread.

### 2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ARS 53, *General principles of food hygiene — Code of practice*

ARS 56, *Prepackaged foods — Labelling*

ARS 471, *Food grade salt — Specification*

WD-ARS 838-2012, *Cassava flour — Specification*

WD-ARS 840-2012, *High quality cassava flour — Specification*

WD-ARS 844:2012, *Cassava and cassava products — Determination of total cyanogens — Enzymatic assay method*

CAC/GL 50, *Codex general guidelines on sampling*

CODEX Stan 192, *General standard for food additives*

CODEX STAN 193, *Codex general standard for contaminants and toxins in food and feed*

CODEX STAN 228, *General methods of analysis of contaminants*

ISO 1842, *Fruit and vegetable products — Determination of pH*

ISO 4832, *Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of coliforms — Colony-count technique*

ISO 4833, *Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of microorganisms — Colony-count technique at 30 degrees C*

ISO 6579, *Microbiology of food and animal feeding stuffs — Horizontal method for the detection of Salmonella spp.*

ISO 6888-1, *Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of coagulase-positive staphylococci (Staphylococcus aureus and other species) — Part 1: Technique using Baird-Parker agar medium*

ISO 6888-2, *Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of coagulase-positive staphylococci (Staphylococcus aureus and other species) — Part 2: Technique using rabbit plasma fibrinogen agar medium*

ISO 6888-3, *Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of coagulase-positive staphylococci (Staphylococcus aureus and other species) — Part 3: Detection and MPN technique for low numbers*

ISO 7251, *Microbiology of food and animal feeding stuffs — Horizontal method for the detection and enumeration of presumptive Escherichia coli — Most probable number technique*

ISO 21527-2, *Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of yeasts and moulds — Part 2: Colony count technique in products with water activity less than or equal to 0.95*

## 3 Definitions

For the purpose of this standard the following definitions apply.

### 3.1

#### **cassava bread**

a thin, cracker-like bread made by leaching and drying the root of the cassava plant

## 4 Essential quality and compositional requirements

### 4.1 Raw materials

The following materials shall be used in the processing of cassava bread:

**4.1.1 Cassava flour** — complying with WD-ARS 847:2012.

**4.1.2 Edible oil or fat** — Shall comply with the relevant African Standards.

### 4.2 Optional ingredients

**4.2.1 Edible salt** — Shall comply with ARS 471.

**4.2.2 Permitted flavourings**

### 4.3 Manufacturing

**4.3.1** The manufacturing process used for cassava bread made from bitter cassava must conform to established (traditional or scientific) procedures of harvesting, peeling, grating, dehydrating and baking the cassava flour that eliminates the cyanide sugars naturally present in varying concentrations in bitter cassava.

**4.3.2** The premises, equipment and facilities shall be located, designed and constructed to ensure that:

- a) contamination is minimized;
- b) it will permit appropriate maintenance, cleaning and sanitizing; and
- c) there is effective protection against pest access and harbourage.

**4.3.3** Cassava bread shall be handled by persons who maintain a high degree of cleanliness and wear suitable protective attire.

### 4.4 Requirements of the finished product

Cassava bread shall be:

- a) free from abnormal flavours, odours and living insects; and
- b) filth (impurities of animal origin, including dead insects) in amounts which may represent a hazard to human health.

#### 4.5 Specific requirements

Cassava bread shall conform to the requirements specified in Table 1.

**Table 1 — Requirements for cassava bread**

S/N	Parameter	Requirements	Method of test
1	Moisture content, %, by mass, max.	12.0	ISO 712
2	Crude fibre, % by mass	3.5 – 4.0	ISO 5498
3	Ash	2.0	ISO 2171
4	Acid insoluble ash, %, by mass, max	0.20	Annex A
5	pH of aqueous extract	5.3 – 6.0	ISO 1842
6	Hydrogen cyanide	10.0	WD-ARS 844

#### 5 Food additives

Food additives, if used in the preparation of cassava bread, shall comply with CODEX STAN 192.

#### 6 Contaminants

##### 6.1 Pesticide residues

Cassava bread shall conform to maximum residue limits for pesticide residues established by the Codex Alimentarius Commission for this commodity.

##### 6.2 Heavy metal contaminants

When analyzed in accordance with CODEX STAN 228, cassava bread shall be free from lead, cadmium, copper, iron and zinc in amounts which may represent a hazard to human health.

##### 6.3 Other contaminants

Cassava bread shall comply with the maximum levels of CODEX STAN 193.

#### 7 Hygiene

**7.1** Cassava bread shall be prepared and handled in a hygienic manner in accordance with ARS 53 and shall conform to microbiological limits specified in Table 2.

**7.2** During handling, storage and transportation, effective measures must be taken to prevent cross contamination with chemicals, microbial or physical contaminants.

**Table 2 — Microbiological limits for cassava bread**

S/N	Micro-organism(s)	Requirements	Method of test
	Total viable count, CFU per gram, max	$10^4$	ISO 4833
1	<i>Escherichia coli</i> , cfu/g, max.	absent	ISO 7251
2	<i>Salmonella</i> , 25g, max.	absent	ISO 6579
3	Yeasts and moulds, cfu/g, max.	$10^3$	ISO 21527-2

## 8 Packaging

**8.1** Cassava bread shall be packed in such a way as to protect the produce from breakage. The materials used inside the package shall be new, clean and of a quality such as to avoid causing any external or internal damage to the produce.

**8.2** The containers, including packaging material, shall be made of substances which are safe, made of food grade material and suitable for the intended use. They should not impart any toxic substance or undesirable odour or flavour to the product.

**8.3** The net weight of the packages for cassava bread may be required to meet the relevant regulations of the destination country.

## 9 Labelling

**9.1** In addition to the requirements of ARS 56, the following specific labelling requirements shall apply and shall be **legibly** and **indelibly** marked:

- a) common name of the product 'Cassava Bread';
- b) name, and physical address of the manufacturer/ distributor and /or trade name/ brand name;
- c) date of manufacture;
- d) list of ingredients;
- e) lot identification;
- f) expiry date;
- g) the net weight in metric units;
- h) storage instructions;
- i) declaration of flavouring agent or spice used; and
- j) instructions on disposal of used package.

**9.2** When labelling non-retail packages, information for non-retail packages shall either be given on the packages or in accompanying documents, except that the name of the product, lot identification and the name and address of the manufacturer or packer shall appear on the packages.

**9.3** A batch or lot number in clear or in code shall be included on the label, together with an expiry date in the form "Best before" or "Use before" indicating the last date on which the manufacturer can be sure that the product will be acceptable.

**9.4** Storage instructions may also be included on the label. Where any nutritional claim is made referring to the Cassava Bread, full nutritional information shall be given.

## 10 Sampling

Sampling shall be done in accordance with CAC/GL 50.

## 11 Criteria for conformity

A lot shall be declared as conforming to this standard if samples inspected or analysed for quality requirements conform to the provisions of this standard.

## Annex A (normative)

### Determination of acid insoluble ash

#### A.1 Reagent

**A.1.1 Dilute Hydrochloric Acid** — 1:1, prepared from concentrated hydrochloric acid.

#### A.2 Procedure

**A.2.1** Weigh accurately about 2 g of the dried material in a tared porcelain, silica or platinum dish. Ignite with a meker burner for about 1 hour. Complete the ignition by keeping in a muffle furnace at 500 °C to 570 °C until grey ash results.

Cool and filter through whatman filter paper No. 42 or its equivalent. Wash the residue with hot water until the washings are free from chlorides as tested with silver nitrate solution and return the filter paper and residue to the dish. Keep it in an electric air oven maintained at  $135 \pm 2$  °C for about 3 hrs. Ignite the dish again for about 30 minutes, cool and weigh. Repeat this process till the difference between two successive weighings is less than 1 mg. Note the lowest weight.

#### A.3 Calculation

**A.3.1** Acid insoluble ash, per cent by weight

$$= \frac{100(M_2 - M)}{M_1 - M}$$

where,

$M_2$  = the lowest weight, in g, of the dish with the acid insoluble ash;

$M$  = weight, in g, of the empty dish; and

$M_1$  = weight, in g, of the dish with the dried product taken for the test.

**Bibliography**

CARICON Standard, CRS 19:2010, *Specification for cassava bread*

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